

**LISTING OF THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in this application.

**Claim 1 (Cancelled)**

**Claim 2 (Currently Amended)** The method of Claim [[1]] 13 wherein said first semiconductor layer is subjected to a step in which a surface native oxide layer is removed prior to forming said monolayer.

**Claim 3 (Original)** The method of Claim 2 wherein said surface native oxide layer is removed by a hydrofluoric acid-containing solution.

**Claim 4 (Currently Amended)** The method of Claim [[1]] 13 wherein said first semiconductor layer is subjected to a hydrogen termination processing step prior to forming said monolayer.

**Claim 5 (Original)** The method of Claim 4 wherein said hydrogen termination processing step comprises contacting the first semiconductor layer with hydrofluoric acid either in solution or in the gas phase.

**Claim 6 (Original)** The method of Claim 4 wherein said hydrogen termination processing step comprises a hydrogen anneal.

Claim 7 (Currently Amended) The method of Claim [[1]] 13 wherein said dopants are n-type dopants or p-type dopants.

Claim 8 (Cancelled)

Claim 9 (Currently Amended) The method of Claim [[1]] 13 wherein said dopants are located in the second semiconductor layer is doped.

Claim 10 (Currently Amended) The method of Claim [[1]] 13 wherein said forming said monolayer comprises contacting the first semiconductor layer with a solution comprising iodine and an alcohol.

Claim 11 (Original) The method of Claim 10 wherein said solution comprising iodine and an alcohol contains from about  $1 \times 10^{-3}$  to about  $1 \times 10^{-5}$  M of iodine in alcohol.

Claim 12 (Currently Amended) The method of Claim [[1]] 13 wherein said forming a second semiconductor layer comprises a deposition process that is performed at a temperature of about 500°C or greater.

Claim 13 (Currently Amended) A method of controlling dopant diffusion comprising: forming a monolayer comprising carbon and oxygen on a first semiconductor layer that includes dopants therein, said monolayer substantially retards diffusion of dopants;

The method of Claim 1 further comprising annealing said first semiconductor layer[[],]  
and said monolayer to activate said dopants, ~~said anneal occurs prior to forming said second  
semiconductor layer; and~~  
forming a second semiconductor layer on said monolayer.

Claim 14 (Original) The method of Claim 10 wherein said alcohol comprises methanol.

Claim 15 (Cancelled)

Claim 16 (Currently Amended) The method of Claim [[15]] 26 wherein said first material layer is a first semiconductor layer which is subjected to a step in which a surface native oxide layer is removed prior to forming said monolayer.

Claim 17 (Currently Amended) The method of Claim [[15]] 26 wherein said first material layer is subjected to a hydrogen termination processing step prior to forming said monolayer.

Claim 18 (Original) The method of Claim 17 wherein said hydrogen termination processing step comprises contacting the first material layer with a hydrofluoric acid-containing solution, a gas phase containing hydrofluoric acid or a hydrogen anneal.

Claim 19 (Currently Amended) The method of Claim [[15]] 26 wherein said dopants are n-type dopants or p-type dopants.

Claim 20 (Currently Amended) The method of Claim [[15]] 26 wherein said dopants are located in said first material layer.

Claim 21 (Currently Amended) The method of Claim [[15]] 26 wherein said dopants are located in said overlayer.

Claim 22 (Currently Amended) The method of Claim [[15]] 26 wherein said forming said monolayer comprises contacting the first material layer with a solution comprising iodine and an alcohol.

Claim 23 (Original) The method of Claim 22 wherein said solution comprising iodine and an alcohol contains from about  $1 \times 10^{-3}$  to about  $1 \times 10^{-5}$  M of iodine in alcohol.

Claim 24 (Currently Amended) The method of Claim [[15]] 26 wherein said overlayer comprises a semiconductor material, an insulator, a conductor or any combination thereof.

Claim 25 (Currently Amended) The method of Claim [[15]] 26 wherein said forming the overlayer comprises a deposition process that is performed at a temperature of about 500°C or greater.

Claim 26 (Currently Amended) A method of controlling dopant diffusion comprising: forming a monolayer comprising carbon and oxygen on a first material layer; and

forming an overlayer on said monolayer, wherein one of said first material layer or said overlayer contains dopants and said monolayer substantially retards diffusion of said dopants;  
and

~~The method of Claim 15 further comprising annealing said first material layer, said monolayer and said overlayer.~~

Claim 27 (Original) The method of Claim 21 wherein said alcohol comprises methanol.

Claim 28 (Currently Amended) The method of Claim [[15]] 26 wherein said first material layer comprises an insulator and the overlayer comprises a conductor.